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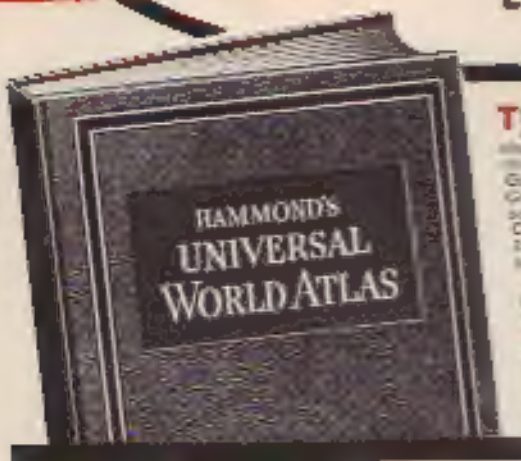
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VOL. 14 NO. 3

Mechanics & Handicraft

A TECHNICAL JOURNAL OF SCIENCE AND INDUSTRY

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COL. ROYAL B. LORD ("Cargo Planes for Victory," page 66) is an Army Engineer whose thought is playing an important part in shaping America's war policies and strategy. As Assistant Director of the Board of Economic Warfare, he is making great contributions to hemisphere solidarity. His inventions for the U.S. Army, the Lord Portable Steel Machine Gun Emplacement and the Lord Portable Military Cellway, were described in previous issues of this magazine. An authority on low-cost housing, he developed modern methods of construction with pre-fabricated panels while serving as Chief Engineer of the Resettlement Administration by personal appointment of President Roosevelt.

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PUBLISHED MONTHLY at 100 Fourth Avenue, New York, N. Y., by CHARLES MCILENDON, Publisher, 200, Broadway, New York, N. Y., and GEORGE H. WELLS, Jr., Editor, 100, Fourth Avenue, New York, N. Y. Second-class postage paid at New York, N. Y., and at additional mailing offices. Postmaster: Send address changes in New York, N. Y., to POPULAR SCIENCE, 100, Fourth Avenue, New York, N. Y. Outside New York, N. Y., to POPULAR SCIENCE, 200, Broadway, New York, N. Y. Subscription price, \$2.00 per annum in advance. Single copies, 15 cents. Foreign postage and handling charges extra. Second-class postage paid at New York, N. Y., and at additional mailing offices. Postmaster: Send address changes in New York, N. Y., to POPULAR SCIENCE, 100, Fourth Avenue, New York, N. Y. Outside New York, N. Y., to POPULAR SCIENCE, 200, Broadway, New York, N. Y. Subscription price, \$2.00 per annum in advance. Single copies, 15 cents. Foreign postage and handling charges extra.

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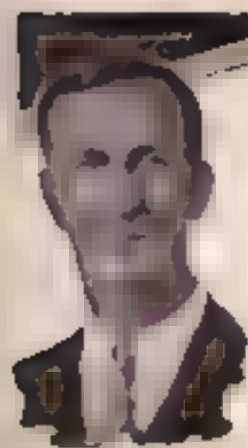
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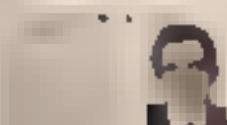
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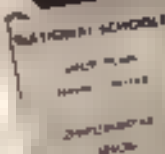
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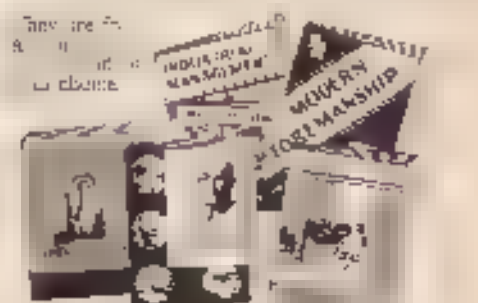
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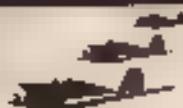
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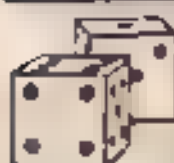
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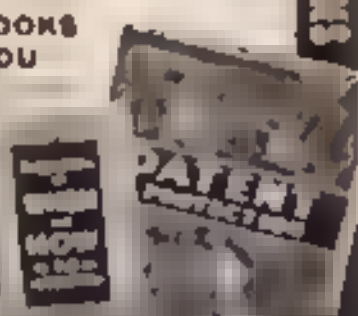
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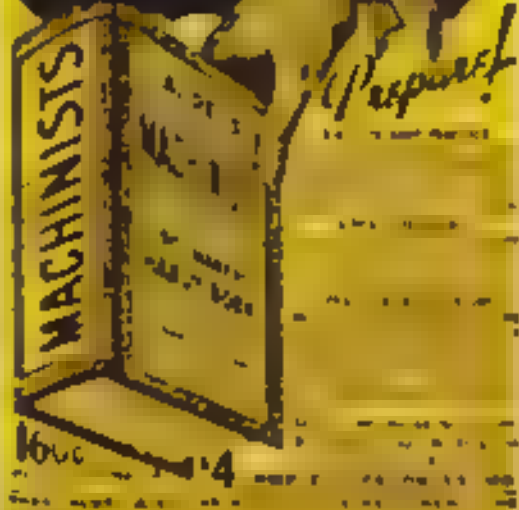


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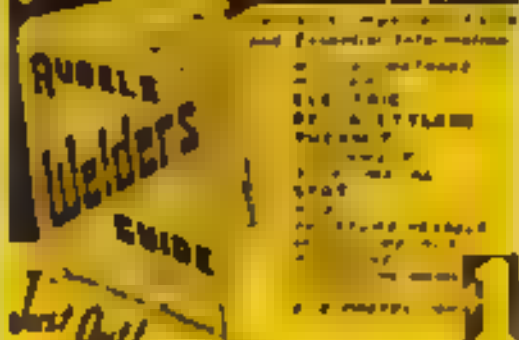
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A huge bomber rolls back and forth down the dark runway. Hours later it returns and circles above the field. Not a light shows—not its wheels unerringly find the runway its pilot never sees.

How can men fly like this? How can they take off in darkness, return to an unmarked field, land safely without lights? The answer, of course, is instruments—precise, delicate dials and indicators that are the eyes and ears of our fighting forces.

In the cockpit of every American bomber are more than 200 of these instruments. In ships, submarines, tanks, in every type of artillery, instruments perform a thousand essential tasks. America needs instruments by the millions.

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**SIMPLE PROCESS HELPS GET
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By **ALDEN P. ARMAGNAC**

TINY patterns of red, blue, green, and other hues, produced on small discs of paper, now yield the innermost secrets of valuable and strategic ores. Worked out by Dr. Gregoire Gulseit, Russian-born chemist and metallurgist, while a university professor in Switzerland, and developed here into a practical tool, this method of "color prospecting" aids industry today at the Westport, Conn., laboratories of The Inco Company, prominent chemical and metallurgical engineers and makers of processing equipment.

Use of the new process shows the richness of a sample of ore in virtually any metal; in what particular chemical compounds the metal appears; how it is distributed through the ore—in big lumps or microscopic specks; whether the metal is difficult or easy to ex-

tract. In the color print at left, above, red indicates lead in the specimen of copper-lead ore above it.

1 For color prospecting, a sample of ore is put into a pressure chamber with a plastic material such as the white powder seen in the photo below.

2 At left, Dr. Gulseit applies heat and pressure to embed the ore in a transparent plastic wafer.

